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PRELIMINARY REPORT
INDUSTRY SERIES

1987
Census of Manufactures

MC87-I-35B(P)
Issued July 1989

CONSTRUCTION, MINING, AND MATERIALS HANDLING MACHINERY AND EQUIPMENT

Industries 3531, 3532, 3533, 3534, 3535, 3536, and 3537

INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.[1]

INDUSTRY 3531, CONSTRUCTION MACHINERY

In the 1987 Census of Manufactures, Industry 3531, Construction Machinery, had employment of 80.6 thousand. The employment figure was 30 percent below the 115.5 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 8 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $12.7 billion. The products primary to this industry appear in table 2 and aggregated to $11.7 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $6.9 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3532, MINING MACHINERY

In the 1987 Census of Manufactures, Industry 3532, Mining Machinery, had employment of 13.5 thousand. The employment figure was 45 percent below the 24.6 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 8 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $1.5 billion. The products primary to this industry appear in table 2 and aggregated to $1.4 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $745.6 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3533, OIL AND GAS FIELD MACHINERY

In the 1987 Census of Manufactures, Industry 3533, Oil and Gas Field Machinery, had employment of 24.1 thousand. The employment figure was 76 percent below the 98.5 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 26 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

[1] **Standard Industrial Classification Manual: 1987.** For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call **Mary Jane Gwynn** (301) 763-7304.

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The total value of shipments for establishments classified in this industry was $2.7 billion. The products primary to this industry appear in table 2 and aggregated to $2.2 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $1.2 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3534, ELEVATORS AND MOVING STAIRWAYS

In the 1987 Census of Manufactures, Industry 3534, Elevators and Moving Stairways, had employment of 10.2 thousand. The employment figure was 22 percent below the 13.0 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 13 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $1.1 billion. The products primary to this industry appear in table 2 and aggregated to $1.1 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $565.3 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3535, CONVEYORS AND CONVEYING EQUIPMENT

In the 1987 Census of Manufactures, Industry 3535, Conveyors and Conveying Equipment, had employment of 31.3 thousand. The employment figure was 14 percent below the 36.6 thousand reported in 1982.

The total value of shipments for establishments classified in this industry was $3.4 billion. The products primary to this industry appear in table 2 and aggregated to $3.1 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $1.6 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3536, HOISTS, CRANES, AND MONORAILS

In the 1987 Census of Manufactures, Industry 3536, Hoists, Cranes, and Monorails, had employment of 7.6 thousand.

The total value of shipments for establishments classified in this industry was $717.2 million. The products primary to this industry appear in table 2 and aggregated to $737.4 million in 1987.

The cost of materials and services used by establishments in this industry amounted to $331.3 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3537, INDUSTRIAL TRUCKS AND TRACTORS

In the 1987 Census of Manufactures, Industry 3537, Industrial Trucks and Tractors, had employment of 19.4 thousand.

The total value of shipments for establishments classified in this industry was $2.4 billion. The products primary to this industry appear in table 2 and aggregated to $2.2 billion in 1987.

The cost of materials and services used by establishments in this industry amounted to $1.5 billion in 1987. Data on specific materials consumed appear in table 3.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

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Census/ASM		
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Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
INDUSTRY 3531, CONSTRUCTION MACHINERY															
1987 Census	(NA)	934	417	80.6	2 414.9	53.8	106.5	1 486.9	5 756.9	6 888.2	12 735.4	336.0	2 678.5	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	87.9	2 503.5	57.7	109.4	1 482.7	5 902.9	6 978.7	12 987.1	296.0	2 838.6	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	91.4	2 539.9	59.7	113.3	1 541.0	5 694.2	6 625.9	12 798.8	301.8	2 994.2	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	95.8	2 618.7	63.7	121.1	1 613.9	5 801.3	6 775.1	12 692.7	248.1	3 572.9	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	91.9	2 262.6	57.9	99.7	1 265.4	4 574.0	4 907.2	10 311.8	323.4	3 819.3	(NA)	(NA)
1982 Census	817	939	444	115.5	2 653.1	72.8	122.6	1 522.5	5 477.8	6 151.6	11 657.9	419.4	4 764.7	91	94
1981 ASM	(NA)	(NA)	(NA)	145.9	3 490.3	101.1	190.6	2 246.7	8 256.1	8 798.9	16 929.7	577.6	3 850.7	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	157.9	3 350.1	108.6	203.5	2 156.8	7 448.6	8 498.5	15 994.0	664.2	4 404.5	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	175.2	3 282.1	125.7	231.7	2 161.2	7 898.3	8 606.4	16 190.1	628.5	3 922.7	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	169.0	3 075.2	121.8	239.6	2 076.3	7 554.4	8 427.9	15 700.4	550.7	3 598.6	(NA)	(NA)
1977 Census	807	922	446	155.3	2 547.1	111.2	212.7	1 708.1	5 744.3	6 822.5	12 628.7	498.3	3 142.3	91	95
1976 ASM	(NA)	(NA)	(NA)	144.8	2 119.0	102.3	195.4	1 415.3	4 645.3	5 798.2	10 405.7	468.5	2 965.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	150.3	2 069.7	108.7	215.8	1 423.2	4 620.9	5 738.0	10 150.7	429.2	2 864.7	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	157.5	2 021.7	116.4	236.6	1 418.1	4 522.9	5 209.8	9 256.2	396.6	2 712.9	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	151.1	1 760.1	111.8	227.8	1 228.0	3 736.2	3 750.6	7 333.5	216.2	1 993.5	(NA)	(NA)
1972 Census	644	748	387	133.8	1 460.2	98.2	197.4	997.0	3 130.7	3 055.2	6 091.0	159.5	1 695.7	90	93
INDUSTRY 3532, MINING MACHINERY															
1987 Census	(NA)	314	121	13.5	353.2	8.2	16.2	180.0	769.4	745.5	1 512.0	39.3	525.5	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	14.7	374.8	8.5	16.0	181.3	783.2	725.9	1 532.5	32.8	568.1	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	16.1	394.2	9.3	17.2	189.5	784.0	822.6	1 663.9	26.7	612.4	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	16.9	391.5	9.9	18.6	198.0	816.0	808.4	1 628.4	30.7	689.8	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	16.9	373.2	9.3	17.0	179.3	736.5	696.8	1 514.4	37.9	649.4	(NA)	(NA)
1982 Census	316	369	175	24.6	522.1	14.3	25.9	275.4	1 113.0	991.7	2 109.3	66.0	756.1	90	89
1981 ASM	(NA)	(NA)	(NA)	28.2	585.4	17.4	33.9	329.7	1 296.3	1 280.1	2 571.3	80.1	827.7	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	29.8	550.4	18.7	35.7	311.3	1 269.6	1 220.0	2 452.7	97.0	811.8	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	29.5	491.2	19.0	36.7	281.9	1 080.9	1 092.2	2 129.6	58.3	745.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	31.0	464.6	19.8	37.6	278.1	1 032.5	992.3	1 991.9	74.8	683.4	(NA)	(NA)
1977 Census	293	344	168	31.4	425.9	20.3	39.7	262.9	1 016.8	1 021.9	1 996.7	67.0	646.1	88	86
1976 ASM	(NA)	(NA)	(NA)	31.9	410.3	21.7	43.4	255.0	854.9	1 118.0	1 941.1	68.6	615.2	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	29.4	365.9	20.3	40.0	226.8	879.6	943.2	1 702.3	82.8	598.8	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	25.3	274.8	17.5	34.4	169.8	639.1	630.5	1 188.4	29.6	418.8	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	22.5	227.2	15.2	29.9	136.7	476.1	432.2	876.3	16.0	277.8	(NA)	(NA)
1972 Census	220	240	124	21.3	197.6	14.3	27.4	116.9	393.2	389.0	771.2	13.1	237.7	87	81
INDUSTRY 3533, OIL AND GAS FIELD MACHINERY															
1987 Census	(NA)	622	185	24.1	698.0	12.9	25.7	335.1	1 197.0	1 186.4	2 656.6	31.4	1 546.7	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	32.6	877.9	15.7	29.9	404.5	1 701.3	1 524.9	3 577.0	72.7	2 060.8	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	46.8	1 295.1	27.6	54.7	672.7	3 048.9	2 340.4	5 714.0	132.5	2 677.9	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	49.2	1 308.5	28.7	57.7	698.1	3 484.0	2 273.1	5 803.5	243.6	3 261.7	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	62.9	1 492.7	35.1	67.6	783.6	3 330.1	2 605.2	6 586.4	310.9	3 945.6	(NA)	(NA)
1982 Census	848	1 015	498	98.5	2 341.9	60.0	120.1	1 292.4	6 545.8	4 786.0	11 195.1	903.2	4 748.6	92	96
1981 ASM	(NA)	(NA)	(NA)	95.0	2 189.2	64.3	133.9	1 333.3	7 537.8	5 086.3	11 672.8	701.0	3 565.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	79.1	1 616.5	52.9	109.8	995.1	4 918.0	3 261.9	7 789.8	462.1	2 408.2	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	71.8	1 293.7	48.1	97.2	790.1	3 726.8	2 476.0	5 955.1	375.0	1 887.6	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	68.9	1 145.3	46.5	97.9	696.4	3 147.0	2 192.9	5 030.5	284.3	1 622.5	(NA)	(NA)
1977 Census	356	478	247	58.6	867.5	39.8	83.4	543.3	2 437.6	1 493.4	3 912.4	257.5	1 212.5	88	95
1976 ASM	(NA)	(NA)	(NA)	57.3	804.7	38.1	80.7	483.7	2 057.9	1 317.7	3 282.5	195.0	1 164.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	54.8	719.7	37.4	81.3	444.5	2 014.3	1 194.6	3 060.1	182.8	1 061.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	50.1	593.9	34.0	73.0	366.5	1 502.1	871.8	2 183.3	158.7	804.0	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	38.9	416.7	25.6	54.2	254.4	934.9	600.5	1 457.5	58.2	488.1	(NA)	(NA)
1972 Census	257	315	159	35.9	357.5	24.3	49.9	217.3	788.6	463.6	1 213.0	54.7	382.2	82	93
INDUSTRY 3534, ELEVATORS AND MOVING STAIRWAYS															
1987 Census	(NA)	176	81	10.2	262.4	6.3	12.8	143.5	524.7	565.3	1 084.4	21.7	177.6	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	11.7	286.4	6.7	13.4	146.9	597.3	620.7	1 224.3	16.4	176.8	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	12.0	286.0	7.6	15.2	163.1	590.2	636.5	1 214.3	21.8	222.4	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	12.2	284.3	7.5	15.2	157.0	566.0	604.3	1 171.6	20.4	215.5	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	11.6	270.1	7.2	14.5	141.7	545.7	529.5	1 128.4	22.1	214.3	(NA)	(NA)
1982 Census	148	165	83	13.0	270.7	7.7	15.1	137.0	589.4	557.6	1 120.7	31.2	238.2	96	95
1981 ASM	(NA)	(NA)	(NA)	11.4	206.1	6.6	13.5	97.8	406.9	448.1	845.4	32.4	168.0	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	11.7	209.2	6.6	13.6	99.2	340.1	364.5	707.1	29.2	159.0	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	12.2	195.0	7.2	14.5	94.0	331.9	378.9	704.8	14.7	156.4	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	10.5	158.0	6.4	12.4	79.0	293.0	265.1	538.5	6.1	159.3	(NA)	(NA)
1977 Census	134	152	72	10.2	141.9	5.9	11.5	69.4	284.5	205.9	489.7	8.8	119.1	96	93
1976 ASM	(NA)	(NA)	(NA)	8.8	119.2	5.2	10.4	58.1	220.5	175.9	426.9	21.9	111.0	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	10.7	127.1	6.0	12.0	60.6	239.4	182.0	433.9	10.8	170.3	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	13.2	143.7	7.5	15.1	69.7	337.1	209.8	524.9	10.2	178.3	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	13.3	141.2	7.9	16.4	74.2	279.0	186.4	470.7	9.0	130.8	(NA)	(NA)
1972 Census	135	154	88	15.0	144.5	8.6	17.2	73.7	310.2	181.7	483.6	7.8	133.2	97	96
INDUSTRY 3535, CONVEYORS AND CONVEYING EQUIPMENT															
1987 Census	(NA)	741	344	31.3	852.4	17.7	37.5	377.5	1 742.5	1 628.6	3 387.8	123.3	523.1	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	32.7	836.0	18.3	38.2	370.9	1 650.5	1 668.8	3 343.6	49.3	508.8	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	32.4	786.0	18.6	38.1	357.2	1 538.7	1 534.4	3 035.4	67.7	530.6	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	31.8	735.0	18.3	37.3	343.9	1 395.6	1 367.8	2 742.5	45.1	480.3	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	31.5	701.4	17.5	34.1	312.0	1 197.6	1 288.0	2 572.9	42.3	476.8	(NA)	(NA)
1982 Census	646	699	363	36.6	759.1	20.4	39.8	346.7	1 472.7	1 455.7	2 946.7	58.0	551.4	89	91
1981 ASM	(NA)	(NA)	(NA)	36.6	742.1	21.1	41.6	344.8	1 458.4	1 511.4	2 976.6	48.3	524.8	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	39.1	698.4	23.2	45.9	341.8	1 505.2	1 368.8	2 841.7	55.0	524.8	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	38.5	643.8	23.1	46.5	317.7	1 378.9	1 280.3	2 633.0	63.1	484.1	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	36.9	566.8	21.1	42.1	276.5	1 212.0	1 055.7	2 223.2	57.6	405.5	(NA)	(NA)

See footnotes at end of table.

Table 1. Historical Statistics for the Industry: 1987 and Earlier Years—Con.

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Year[1]	Companies[2] (no.)	All establishments[3]		All employees		Production workers			Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios	
		Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization (percent)	Coverage (percent)
INDUSTRY 3535, CONVEYORS AND CONVEYING EQUIPMENT—Con.															
1987 Census	572	617	295	33.0	477.8	19.2	38.6	227.3	1 021.7	901.5	1 902.9	34.8	364.9	90	87
1986 ASM	(NA)	(NA)	(NA)	28.8	384.6	16.1	32.5	176.5	825.0	681.8	1 508.1	34.3	299.8	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	30.1	364.2	17.0	33.9	166.7	755.7	680.0	1 450.7	29.8	295.8	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	31.0	368.2	18.2	36.6	179.2	747.7	625.7	1 336.9	34.9	276.3	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	30.8	336.6	18.9	37.6	169.5	636.2	544.4	1 163.9	21.4	187.0	(NA)	(NA)
1982 Census	457	494	243	27.2	275.5	16.4	32.6	138.9	540.1	431.0	968.0	13.2	152.3	90	88
INDUSTRY 3536, HOISTS, CRANES, AND MONORAILS[6]															
1987 Census	(NA)	176	81	7.6	190.3	4.4	8.5	95.9	389.0	331.3	717.2	7.7	168.5	(NA)	(NA)
INDUSTRY 3537, INDUSTRIAL TRUCKS AND TRACTORS[6]															
1987 Census	(NA)	455	187	19.4	463.5	12.5	24.0	242.6	933.6	1 452.1	2 391.8	37.2	447.6	(NA)	(NA)

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative-record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 3531, 7%; SIC 3532, 13%; SIC 3533, 15%; SIC 3534, 10%; SIC 3535, 19%; SIC 3536, 17%; and 3537, 15%.

[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[3]Includes establishments with payroll at any time during year.

[4]Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

[5]Estimates for new capital expenditures have associated standard error of 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

[6]Industry definition is new for 1987 Census of Manufactures. An explantion of the Standard Industrial Classification revision will appear in the final industrial series text that supercedes this report.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3531- —	**CONSTRUCTION MACHINERY**						
	Total	**(NA)**	**(X)**	**11 674.6**	**(NA)**	**(X)**	**10 784.1**
3531A —	Wheel tractors, contractors' off-highway type (2- and 4-wheel) (for use on natural terrain) (including towing units, loaders, and bare wheel tractors), rubber-tired dozers, and self-propelled wheeled log skidders (sold with or without attachments) (excluding parts):						
3531A 00	Wheel tractors, contractors' off-highway type (2- and 4-wheel) (for use on natural terrain) (including towing units, loaders, and bare wheel tractors), rubber-tired dozers, and self-propelled wheeled log skidders (sold with or without attachments) (excluding parts) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	376.7	21	(X)	266.8
3531B —	Crawler tractors, 20 net engine horsepower rating or more (sold with or without attachments) (excluding parts):						
3531B 00	Crawler tractors, 20 net engine horsepower rating or more (sold with or without attachments) (excluding parts) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	945.6	8	(X)	804.8
3531C —	Tractor shovel loaders (sold with or without attachments) (excluding parts):						
3531C 00	Tractor shovel loaders (sold with or without attachments) (excluding parts) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	1 737.0	25	(X)	1 248.4
3531E —	Power cranes, draglines, and shovels (excavators) (including surface mining equipment and attachments, but excluding parts and equipment for mounting on tractors):						
3531E 00	Power cranes, draglines, and shovels (excavators) (including surface mining equipment and attachments, but excluding parts and equipment for mounting on tractors) (for additional detail, see Current Industrial Report MA-35D, Construction Machinery)	(NA)	(X)	957.1	68	(X)	[3] 940.3

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3531- pt	**CONSTRUCTION MACHINERY**—Con.						
3531F —	Mixers, pavers, and related equipment (excluding parts):						
3531F 00	Mixers, pavers, and related equipment (excluding parts) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	580.0	70	(X)	307.0
3531G —	Scrapers, graders, rollers, and off-highway trucks and coal haulers, trailers, wagons, and rough terrain forklifts (excluding parts):						
3531G 00	Scrapers, graders, rollers, and off-highway trucks and coal haulers, trailers, wagons, and rough terrain forklifts (excluding parts) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	1 221.4			
3531H —	Construction machinery for mounting on tractors and other prime movers (excluding parts):				96	(X)	[4] 1 436.2
3531H 00	Construction machinery for mounting on tractors and other prime movers (excluding parts) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	597.0			
3531K —	Other construction machinery and equipment (excluding parts)	(NA)	(X)	1 328.4	(NA)	(X)	1 173.2
3531K 06	Commercial brush, limb, and log chippers for waste wood reduction ... thousands	(NA)	(S)	21.5	7	(S)	6.6
3531K 07	Log splitters ... do	(NA)	(S)	4.5	11	**28.7	14.1
3531K 11	Dredging machinery, hydraulic and other types	(NA)	(X)	28.2	6	(X)	39.3
3531K 20	Self-propelled continuous ditchers and trenchers (including ladder and wheel types) (integral units only) (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	125.8	14	(X)	90.6
3531K 21	Railway maintenance of way equipment (rail layers, ballast spreaders, etc.), except rail cars	(NA)	(X)	86.2	17	(X)	127.3
3531K 22	Vertical earth augers and power post hole diggers, excluding water well and blast hole drills ... thousands	(NA)	(S)	16.0	15	(S)	32.9
3531K 24	Horizontal earth boring machines and accessories ... do	(NA)	(S)	15.1			
3531K 25	Digger-derricks ... do	(NA)	(D)	[5]	3	(D)	[5]
3531K 27	Pile driving equipment, including air or steam pile hammers, diesel pile hammers, impact pile extractors, and vibratory driver extractors ... do	(NA)	(S)	6.3	5	(D)	[5]
3531K 53	Winches, including winches for marine use (excluding winches for mounting on wheel or crawler tractors): Electric	(NA)	(X)	85.6	38	(X)	231.0
3531K 55	Other	(NA)	(X)	58.2			
3531K 61	Automobile hoists (used on tow trucks) ... thousands	(NA)	(D)	[5]	5	(S)	12.0
3531K 70	Portable crushing plants, screening plants, washing plants, and combination plants (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	52.8	15	(X)	51.6
3531K 74	Handheld compaction equipment (including tampers, upright, and vibratory compactors) ... thousands	(NA)	37.0	23.8	13	(S)	25.2
3531K 77	Handheld pavement breakers ... do	(NA)	(S)	8.6	11	108.9	28.9
3531K 82	Rotary snow blowers, except residential (including integral units and attachments for mounting) ... do	(NA)	(S)	7.4	5	(S)	4.6
3531K 90	Personnel aerial work platforms (for additional detail, see Current Industrial Report MQ-35D, Construction Machinery)	(NA)	(X)	501.9	22	(X)	173.3
3531K 97	All other construction machinery and equipment, complete units, including well point systems, derricks, except oil and gas well, including gallows, frames, ginpole, stiff legs, and guy ... thousands	(NA)	71.9	[6]272.6	82	(S)	[6]335.8
3531K 00	Other construction machinery and equipment (excluding parts), n.s.k.	(NA)	(X)	13.9	(NA)	(X)	[7]
3531M —	Parts for construction machinery and equipment, sold separately	(NA)	(X)	3 269.8	(NA)	(X)	3 290.9
3531M 01	Parts for crawler tractors, contractors' off-highway wheel tractors, and tractor shovel loaders	(NA)	(X)	1 398.2	67	(X)	[4] 1 721.0
3531M 03	Parts for power cranes, draglines, and shovels (excavators) (including surface mining equipment, but excluding equipment for mounting on tractors) (for additional detail, see Current Industrial Report MA-35D, Construction Machinery)	(NA)	(X)	265.4	(NA)	(X)	[3]
3531M 05	Parts for mixers, pavers, and related equipment	(NA)	(X)	191.6			
3531M 07	Parts for scrapers, graders, rollers, and off-highway trucks and coal haulers, trailers, and wagons	(NA)	(X)	238.2			
3531M 09	Parts for construction machinery for mounting on tractors and other prime movers	(NA)	(X)	382.2			
3531M 15	Parts for other construction machinery and equipment (except for tractors, power cranes, draglines, shovels, mixers, pavers, and related paving equipment, scrapers, graders, rollers, off-highway trucks and coal haulers, trailers, wagons, and construction machinery for mounting on tractors and other prime movers)	(NA)	(X)	685.3	178	(X)	[4] 1 529.6
3531M 00	Parts for construction machinery and equipment, sold separately, n.s.k.	(NA)	(X)	107.9	(NA)	(X)	740.3
35310 —	Construction machinery, n.s.k.	(NA)	(X)	661.6	(NA)	(X)	316.6
35310 00	Construction machinery, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	356.8	(NA)	(X)	166.9
35310 02	Construction machinery, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	304.7	(NA)	(X)	149.7

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3532- —	**MINING MACHINERY**						
	Total	**(NA)**	**(X)**	**1 355.8**	**(NA)**	**(X)**	**1 936.3**
35325 —	Underground mining machinery:						
35325 00	Underground mining machinery (except parts sold separately) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	208.4	46	(X)	448.6
35326 —	Mineral processing and beneficiation machinery:						
35326 00	Mineral processing and beneficiation equipment (except parts sold separately) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	66.3	43	(X)	91.3
35327 —	Crushing, pulverizing, and screening machinery:						
35327 00	Crushing, pulverizing, and screening machinery, except parts sold separately (excluding portable crushing, screening, washing, and combination plants) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	148.7	50	(X)	182.4
35328 —	Drills and other mining machinery, n.e.c.:						
35328 00	Drills and other mining machinery, n.e.c. (except parts sold separately) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	127.9	28	(X)	129.9
35329 —	Parts and attachments for mining machinery and equipment:	(NA)	(X)	679.2	(NA)	(X)	983.8
	Mining drill bits:						
	Rock drill bits:						
	Percussion:						
35329 33	With working part of sintered metal carbide or cermets	(NA)	(X)	31.1	18	(X)	181.1
35329 34	Other	(NA)					
	Other than percussion:						
35329 37	With working part of sintered metal carbide or cermets	(NA)	(X)	72.0	14	(X)	62.8
35329 38	Other	(NA)	(X)	8.5			
	All other mining drill bits:						
35329 41	With working part of sintered metal carbide or cermets	(NA)	(X)	(9)			
35329 43	Other	(NA)	(X)	*31.5			
	Parts and attachments for mining machinery and equipment, except drill bits:						
35329 71	For face-haulage and support vehicles	(NA)	(X)	45.8	106	(X)	716.8
35329 73	For mineral processing, beneficiation, crushing, pulverizing, and screening machinery	(NA)	(X)	164.2			
35329 75	For all other mining machinery and equipment	(NA)	(X)	279.7			
35329 00	Parts and attachments for mining machinery and equipment, n.s.k.	(NA)	(X)	46.4	(NA)	(X)	23.0
35320 —	Mining machinery, n.s.k.	(NA)	(X)	125.1	(NA)	(X)	100.4
35320 00	Mining machinery, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	33.1	(NA)	(X)	46.1
35320 02	Mining machinery, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	91.9	(NA)	(X)	54.3
3533- —	**OIL AND GAS FIELD MACHINERY**						
	Total	**(NA)**	**(X)**	**2 230.0**	**(NA)**	**(X)**	**9 514.1**
35337 —	Rotary oil field and gas field drilling machinery and equipment	(NA)	(X)	860.4	(NA)	(X)	[13] 803.6
	Rotary drilling surface equipment:						
35337 11	Blocks, crown and traveling ..... number	(NA)	(S)	.3	10	(S)	44.2
35337 12	Draw works and accessories ..... do	(NA)	(S)	1.4	25	(S)	214.7
35337 14	Rotary tables ..... do	(NA)			9	(S)	42.7
35337 15	Elevators, spiders, slips, hooks, links, and connectors	(NA)	(X)	8.5	17	(X)	291.6
35337 16	Swivels and accessories	(NA)	(X)	14.0	14	(X)	68.4
35337 17	Well control equipment (blow-out preventers, etc.)	(NA)	(X)	56.4	27	(X)	768.1
35337 21	Other rotary drilling surface machinery and equipment, including Kelly joints	(NA)	(X)	51.7	30	(X)	276.4
	Rotary drilling subsurface equipment:						
	Bits:						
35337 22	With working part of sintered metal carbide or cermets ..... thousands	(NA)	(S)	179.4	18	*444.4	1 033.6
35337 23	With working part of other material, including diamond ..... do	(NA)	26.0	63.2			
	Reamers and stabilizers:						
35337 24	With working part of sintered metal carbide or cermets	(NA)	(X)	(11)	11	(X)	88.2
35337 25	With working part of other material, including diamond	(NA)	(X)	–			
	Coring equipment:						
35337 26	With working part of sintered metal carbide or cermets	(NA)	(X)	(11)	6	(X)	13.9
35337 27	With working part of other material, including diamond	(NA)	(X)	[11]9.2			
35337 44	Tool joints, subs, and connectors	(NA)	(X)	26.8	19	(X)	410.2
35337 45	Drill collars ..... thousands	(NA)	(S)	10.9	12	(S)	162.2
35337 47	Fishing and cutting tools	(NA)	(X)	25.3	16	(X)	143.3
35337 48	Subsea drilling risers ..... thousands	(NA)	–				
35337 59	Other subsurface rotary drilling equipment	(NA)	(X)	79.8	18	(X)	209.0
35337 61	Parts for rotary drilling equipment, sold separately, except for portable drilling rigs	(NA)	(X)	85.3	(NA)	(X)	(10)

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3533- —	**OIL AND GAS FIELD MACHINERY**—Con.						
35337 —	Rotary oil field and gas field drilling machinery and equipment—Con.						
35337 00	Rotary oil field and gas field drilling machinery and equipment, n.s.k.	(NA)	(X)	48.2	(NA)	(X)	36.1
35338 —	Other oil field and gas field drilling machinery and equipment	(NA)	(X)	89.4	(NA)	(X)	[10]832.4
35338 31	Cable tool drilling machinery and equipment, including both surface and subsurface equipment	(NA)	(X)	-	2	(X)	([12])
	Cementing, floating, guiding, and shoe equipment:						
35338 51	Guide shoes, float collars, and combination guide and float shoes	(NA)	(X)	23.4	15	(X)	85.2
35338 55	Other cementing equipment	(NA)	(X)	21.3	16	(X)	78.7
35338 98	Other oil and gas field drilling equipment, except rotary drilling equipment and portable drilling rigs	(NA)	(X)	42.2	22	(X)	[11]139.3
35338 99	Parts for other oil and gas field drilling equipment, sold separately, except parts for rotary drilling equipment and portable drilling rigs	(NA)			38	(X)	[10]517.5
35338 00	Other oil field and gas field drilling machinery and equipment, n.s.k.	(NA)	(X)	2.6	(NA)	(X)	11.7
35339 —	Oil field and gas field production machinery and equipment (except pumps)	(NA)	(X)	866.1	(NA)	(X)	3 035.2
	Production well equipment, surface, subsurface, and subsea:						
35339 12	Christmas tree assemblies, excluding subsea	(NA)	(X)	46.1	11	(X)	228.1
35339 13	Casing and tubing heads and supports	(NA)	(X)	51.7	18	(X)	213.3
35339 14	Chokes, manifolds, and other accessories (excluding subsea manifolds and templates)	(NA)	(X)	57.8	20	(X)	104.6
35339 19	Rodless oil lifting machinery and equipment (except pumps)	(NA)	(X)	25.6	9	(X)	138.5
35339 21	Subsea Christmas tree assemblies, manifolds, and templates	(NA)	(X)	([13])	6	(X)	50.9
	Rod lifting machinery and equipment, surface, including pumps when they are components of a complete assembly:						
35339 53	Pumping units and accessories, including back crank equipment ..... thousands	(NA)	(D)	([13])	35	(NA)	414.0
35339 55	Other surface rod lifting machinery and equipment	(NA)	(X)	([13])			
35339 57	Subsurface rod lifting equipment (sucker rods), except pumps ..... 1,000 sucker rods	(NA)	1 685.1	52.7	12	**4 989.7	198.0
35339 61	Packers	(NA)	(X)	159.4	15	(X)	384.9
35339 65	Screens, tubing, catchers, etc.	(NA)	(X)	[13]104.6	10	(X)	33.7
35339 71	Oil and gas separating, metering, and treating equipment ..... 1,000 separators	(NA)	(S)	58.6	36	(S)	246.8
35339 98	Other oil and gas field production machinery and tools	(NA)	(X)	234.5	61	(X)	856.3
35339 82	Parts for oil and gas field production machinery and tools, sold separately (excluding parts for portable drilling rigs and other drilling equipment)	(NA)	(X)	31.3	51	(X)	134.7
35339 00	Oil field and gas field production machinery and equipment (except pumps), n.s.k.	(NA)	(X)	43.6	(NA)	(X)	31.4
3533A —	Portable drilling rigs and parts	(NA)	(X)	224.7	(NA)	(X)	532.3
3533A 10	Portable drilling rigs (mounted and unmounted) used on the surface (above ground) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	147.8	40	(X)	[14]415.4
3533A 78	Parts for portable drilling rigs used on the surface (above ground) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	69.0	35	(X)	116.9
3533A 00	Portable drilling rigs and parts, n.s.k.	(NA)	(X)	8.0	(NA)	(X)	([15])
3533B —	Oil and gas field derricks and well surveying machinery	(NA)	(X)	96.5	(NA)	(X)	737.2
3533B 21	Derricks, oil and gas field, substructures, and accessories—regular and portable (including equipment shipped "knocked down" and assembled on site) ..... number	(NA)	(D)	([16])	30	(S)	[14]443.7
3533B 32	Well surveying machinery and equipment, excluding well logging equipment	(NA)	(X)	17.9	25	(X)	277.5
3533B 34	Well logging equipment	(NA)	(X)	[15]75.6			
3533B 00	Oil and gas filled derricks and well surveying machinery, n.s.k.	(NA)	(X)	3.0	(NA)	(X)	[14]16.0
35330 —	Oil and gas field machinery, n.s.k.	(NA)	(X)	292.9	(NA)	(X)	573.4
35330 00	Oil and gas field machinery, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	108.5	(NA)	(X)	381.2
35330 02	Oil and gas field machinery, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	184.4	(NA)	(X)	192.2
3534- —	**ELEVATORS AND MOVING STAIRWAYS**						
	Total	**(NA)**	**(X)**	**1 053.2**	**(NA)**	**(X)**	**1 019.7**
35341 —	Elevators and moving stairways	(NA)	(X)	752.8	(NA)	(X)	747.3
	Elevators (except farm and portable):						
	Electric passenger (except residence lifts):						
35341 05	Geared ..... number	(NA)	(S)	165.2	14	(S)	207.5
35341 07	Gearless ..... do	(NA)	(S)	48.6	7	(S)	169.5
35341 12	Hydraulic passenger ..... do	(NA)	(S)	264.9	19	(S)	166.9
35341 13	Electric freight ..... do	(NA)	(S)	11.0	6	(S)	5.3
35341 15	Hydraulic freight ..... do	(NA)	(S)	24.4	13	(S)	21.0
35341 31	Automobile lifts (service station and garage type) ..... do	(NA)	39 834	112.3	8	19 436	48.9
35341 51	Moving stairways, escalators, and moving walkways ..... do	(NA)	(S)	60.5	5	(S)	48.3

See footnotes at end of table.

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		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3534– —	**ELEVATORS AND MOVING STAIRWAYS**—Con.						
35341 —	Elevators and moving stairways—Con.						
35341 98	Other nonfarm elevators, including sidewalk elevators, dumb waiters, man lifts, hand-operated freight elevators, residence lifts, etc. (excluding portable elevators/stackers)—number	(NA)	(S)	55.2	25	(S)	80.1
35341 00	Elevators and moving stairways, n.s.k.	(NA)	(X)	10.9	(NA)	(X)	-
35342 —	Parts and attachments for elevators and moving stairways (sold separately):						
35342 00	Parts and attachments for elevators and moving stairways (sold separately)	(NA)	(X)	198.4	34	(X)	187.4
35340 —	Elevators and moving stairways, n.s.k.	(NA)	(X)	102.0	(NA)	(X)	84.9
35340 01	Elevators and moving stairways, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	48.9	(NA)	(X)	61.0
35340 02	Elevators and moving stairways, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	53.1	(NA)	(X)	23.9
3535– —	**CONVEYORS AND CONVEYING EQUIPMENT**						
	Total	**(NA)**	**(X)**	**3 081.8**	**(NA)**	**(X)**	**2 570.7**
35353 —	Unit handling conveyors and conveying systems, except hoists and farm elevators	(NA)	(X)	1 546.3	(NA)	(X)	994.2
35353 09	Gravity conveyors (skate wheel and roller)	(NA)	(X)	63.4	29	(X)	70.7
	Trolley conveyors (overhead systems):						
35353 13	Light to medium duty	(NA)	(X)	130.6	40	(X)	66.8
35353 14	Heavy duty	(NA)	(X)	323.9	18	(X)	122.1
35353 17	Tow conveyors (under floor systems)	(NA)	(X)	32.4	7	(X)	24.3
	Powered conveyors (belt and roller):						
35353 21	Light to medium duty	(NA)	(X)	378.0	85	(X)	301.7
35353 23	Heavy duty	(NA)	(X)	174.1	50	(X)	137.1
35353 35	Pneumatic tube conveyors	(NA)	(X)	37.4	10	(X)	43.5
35353 37	Portable conveyors, except farm	(NA)	(X)	155.6	4	(X)	1.7
35353 45	All other, such as pallet conveyors, etc.	(NA)			49	(X)	195.0
35353 00	Unit handling conveyors and conveying systems, except hoists and farm elevators, n.s.k.	(NA)	(X)	250.7	(NA)	(X)	31.2
35354 —	Parts, attachments, and accessories for unit handling conveyors and conveying systems:						
35354 00	Parts, attachments, and accessories for unit handling conveyors and conveying systems (sold separately)	(NA)	(X)	118.4	80	(X)	107.4
35355 —	Bulk material handling conveyors and conveying systems, except hoists and farm elevators	(NA)	(X)	762.8	(NA)	(X)	953.4
	Conveyors and elevators:						
35355 05	Belt conveyors and systems	(NA)	(X)	281.5	127	(X)	393.7
35355 09	Screw conveyors	(NA)	(X)	49.6	45	(X)	62.7
35355 11	Bucket elevators	(NA)	(X)	26.1	46	(X)	46.6
35355 15	Pneumatic conveyors	(NA)	(X)	47.7	30	(X)	103.8
35355 19	Portable conveyors, except farm	(NA)	(X)	14.2	14	(X)	23.1
35355 23	En masse conveyors	(NA)	(X)	10.8	17	(X)	59.8
35355 27	Vibrating conveyors	(NA)	(X)	34.8	24	(X)	39.7
35355 31	All other, such as apron, flight, and drag conveyors, etc.	(NA)	(X)	94.1	50	(X)	85.0
	Unloading and reclaiming systems:						
35355 41	Bucket wheel reclaimers	(NA)	(X)	(18)	4	(X)	15.5
35355 43	Vibrating feeders	(NA)	(X)	37.9	12	(X)	22.3
35355 45	All other, such as bins, apron feeders, gates, etc.	(NA)	(X)	18 43.3	21	(X)	24.4
	Loading and storing systems:						
35355 51	Traveling stackers	(NA)	(X)	9.6	12	(X)	22.4
35355 55	Other, such as trippers, centrifugal throwers, etc.	(NA)	(X)	7.6	15	(X)	11.8
35355 00	Bulk material handling conveyors and conveying systems, except hoists and farm elevators, n.s.k.	(NA)	(X)	105.6	(NA)	(X)	42.6
35356 —	Parts, attachments, and accessories for bulk material handling conveyors and conveying systems, sold separately	(NA)	(X)	292.4	(NA)	(X)	294.7
35356 11	Belt conveyor idlers	(NA)	(X)	69.4	19	(X)	82.7
35356 25	Belt conveyor pulleys	(NA)	(X)	26.4	17	(X)	26.5
35356 37	All other parts, attachments, and accessories, sold separately	(NA)	(X)	181.9	72	(X)	173.8
35356 00	Parts, attachments, and accessories for bulk material handling conveyors and conveying systems, sold separately, n.s.k.	(NA)	(X)	14.7	(NA)	(X)	11.8
35350 —	Conveyors and conveying equipment, n.s.k.	(NA)	(X)	361.8	(NA)	(X)	221.0
35350 00	Conveyors and conveying equipment, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	241.4	(NA)	(X)	156.6
35350 02	Conveyors and conveying equipment, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	120.4	(NA)	(X)	64.4
3536– —	**HOISTS, CRANES, AND MONORAILS**						
	Total	**(NA)**	**(X)**	**737.4**	**(NA)**	**(X)**	**1 028.7**
35363 —	Hoists	(NA)	(X)	337.7	(NA)	(X)	422.5
	Hand hoists:						
35363 01	Chain—thousands	(NA)	(S)	15.7			
35363 02	Ratchet lever—do	(NA)	359.9	19.0	18	*635.8	63.2
35363 03	Wire rope pullers—do	(NA)	(S)	15.4			
35363 13	Electric chain hoists (roller and link)—do	(NA)	(S)	39.0	12	**30.4	29.9

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3536- —	**HOISTS, CRANES, AND MONORAILS**—Con.						
35363 —	Hoists—Con.						
35363 15	Mine shaft and slope wire rope hoists, drum or friction, electric or hydraulic (excluding tuggers, sheaves, skips, cages, and buckets) (for additional detail, see Current Industrial Report MA-35F, Mining Machinery and Mineral Processing Equipment)	(NA)	(X)	[17]	5	(X)	7.9
35363 16	Electric wire rope hoists — thousands	(NA)	(S)	84.3	23	**16.0	80.2
35363 32	Air or other nonelectric chain hoists — do.	(NA)	(S)	19.0	7	(S)	[18]12.6
35363 34	Air or other nonelectric wire rope hoists — do.	(NA)	(S)	4.3	6	[18]5.8	[18]6.0
	Other hoists:						
35363 37	With electric motors — thousands	(NA)	(S)	[17]13.7	50	(S)	[19]130.6
35363 38	With other than electric motors — do.	(NA)	(S)	13.8			
35363 45	Parts and attachments for hoists (sold separately)	(NA)	(X)	76.1	34	(X)	68.8
35363 00	Hoists, n.s.k.	(NA)	(X)	37.5	(NA)	(X)	21.4
35364 —	Overhead traveling cranes and monorail systems	(NA)	(X)	293.5	(NA)	(X)	516.4
	Overhead traveling cranes (excluding construction power cranes):						
35364 01	Single top running bridge type — thousands	(NA)	(S)	22.4	34	(S)	[19]65.8
35364 02	Double top running bridge type — do.	(NA)	(S)	75.5	39	(S)	[19]165.8
35364 03	Under running bridge type — do.	(NA)	(S)	27.8	33	(S)	[19]38.3
35364 04	Gantry type — do.	(NA)	(S)	19.0	20	(S)	[19]20.9
35364 05	Stacker/storage type — do.	(NA)	(S)	6.6	12	(S)	[19]21.0
35364 06	Other, including jib type — do.	(NA)	(S)	13.8	26	(S)	[19]37.5
35364 17	Parts and attachments for overhead traveling cranes (sold separately)	(NA)	(X)	56.2	(NA)	(X)	[20]
35364 52	Monorail systems (manual and powered) — thousands	(NA)	(S)	39.2	11	(S)	42.4
35364 54	Parts and attachments for monorail systems (sold separately)	(NA)	(X)	7.5	34	(X)	[20]111.6
35364 00	Overhead traveling cranes and monorail systems, n.s.k.	(NA)	(X)	25.4	(NA)	(X)	13.1
35360 —	Hoists, cranes, and monorails, n.s.k.	(NA)	(X)	106.1	(NA)	(X)	89.8
35360 00	Hoists, cranes, and monorails, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	82.1	(NA)	(X)	55.3
35360 02	Hoists, cranes, and monorails, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	24.0	(NA)	(X)	34.5
3537- —	**INDUSTRIAL TRUCKS AND TRACTORS**						
	Total	**(NA)**	**(X)**	**2 219.5**	**(NA)**	**(X)**	**1 839.9**
35373 —	Industrial trucks, tractors, mobile straddle carriers and cranes, and automatic stacking machines	(NA)	(X)	1 453.2	(NA)	(X)	1 267.0
	Fork lift trucks and other work trucks fitted with lifting or handling equipment:						
	Self-propelled:						
	Electric motor powered:						
	Operator riding:						
35373 01	Fork lift — thousands	(NA)	*42.5	492.9	27	[21]23.1	[21]358.4
35373 02	Other — do.	(NA)	(S)	9.1			
35373 03	Nonriding — do.	(NA)	(S)	135.5	(NA)	[22]	[22]
	Internal combustion engine or other nonelectric powered:						
	Operator riding:						
35373 05	Fork lift — thousands	(NA)	*16.4	313.5	28	(S)	[24]497.7
35373 06	Other — do.	(NA)	[23]	[23]			
35373 08	Nonriding — do.	(NA)	[23]7	[23]20.8	(NA)	[22]	[22]
35373 12	Not self-propelled (hand lift, etc.) — do.	(NA)	(S)	25.6	9	(S)	14.2
	Works trucks and tractors not fitted with lifting or handling equipment:						
	Self-propelled:						
	Electric motor powered:						
35373 15	Operator riding — thousands	(NA)	(S)	16.8	(NA)	[22]	[22]
35373 16	Other — do.	(NA)			(NA)	[22]	[22]
	Internal combustion engine or other nonelectric powered:						
35373 17	Operator riding — thousands	(NA)	(S)	31.7	11	(S)	[25]18.0
35373 18	Other — do.	(NA)	(S)	[26]	10	* [26]9.7	[26]42.1
35373 19	Not self-propelled	(NA)	(X)	29.9	41	(X)	53.8
35373 21	Mobile straddle carriers and cranes — thousands	(NA)	(S)	46.8	10	(S)	41.9
35373 25	Portable elevators/stackers (except farm type) — do.	(NA)	(D)	[26]1.8	(NA)	[27]	[27]
35373 26	Palletizers and depalletizers (pallet loaders and unloaders)	(NA)	(X)	24.1	12	(X)	23.0
	Hydraulic lift tables (electro-hydraulic lift platforms):						
35373 28	Scissors type — thousands	(NA)	(S)	63.4	11	(S)	30.9
35373 29	Other types — do.	(NA)	(S)	22.0	13	(S)	19.6
35373 31	Metal pallets and skids (excluding wood and metal combination) — do.	(NA)	(S)	11.1	14	(S)	9.4
35373 32	Dock boards (industrial loading ramps, hinged loading ramps) — do.	(NA)	(S)	22.2	10	(S)	12.3
35373 35	Automatic stacking machines — do.	(NA)	(S)	79.1	12	(S)	36.9
35373 39	All other industrial trucks and tractors — do.	(NA)	(S)	52.7	37	(S)	[27]86.4
35373 00	Industrial trucks, tractors, and mobile straddle carriers and cranes, and automatic stacking machines, n.s.k.	(NA)	(X)	54.4	(NA)	(X)	22.7
35374 —	Parts and attachments for industrial trucks and tractors	(NA)	(X)	437.1	(NA)	(X)	[28]409.1
35374 11	Cabs for industrial trucks and tractors	(NA)	(X)	4.4	10	(X)	17.8
35374 17	Parts and attachments for automatic stacking machines (sold separately)	(NA)	(X)	9.4	10	(X)	9.3
35374 19	All other parts and attachments	(NA)	(X)	394.8	93	(X)	[28]360.7
35374 00	Parts and attachments for industrial trucks and tractors, n.s.k.	(NA)	(X)	28.6	(NA)	(X)	21.3

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3537- —	**INDUSTRIAL TRUCKS AND TRACTORS**—Con.						
35370 —	Industrial trucks and tractors, n.s.k.	(NA)	(X)	329.2	(NA)	(X)	163.8
35370 00	Industrial trucks and tractors, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	225.5	(NA)	(X)	103.3
35370 02	Industrial trucks and tractors, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	103.7	(NA)	(X)	60.5

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative record data rather than data actually collected from respondents. Employment cutoffs used for administrative-records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.
[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).
[3]For 1982, data for product code 3531E 00 included parts sold separately.
[4]For 1982, data for attachments (sold separately) for tractors in product codes 3531A 00, 3531B 00, and 3531C 00 were included in product code 3531M 01.
[5]For 1987, data for product codes 3531K 25 and 3531K 61 are combined with product code 3531K 97 to avoid disclosing data for individual companies.
[6]For 1982, data for product codes 3531K 25 and 3531K 27 were combined with product code 3531K 97 to avoid disclosing data for individual companies.
[7]For 1982, data for product code 3531K 00 were included with product code 3531M 00.
[8]For 1982, data for parts for personnel aerial work platforms not for mounting on vehicles (integral units) were included with product code 35374 19.
[9]For 1987, data for product code 35329 41 are combined with product code 35329 43 to avoid disclosing data for individual companies.
[10]For 1982, data for product code 35337 61 were included with product 35338 99.
[11]For 1987, data for product codes 35337 24 and 35337 26 are combined with product code 35337 27 to avoid disclosing data for individual companies.
[12]For 1982, data for product code 35338 31 were combined with product code 35338 98 to avoid disclosing data for individual companies.
[13]For 1987, data for product codes 35339 21, 35339 53, and 35339 55 are combined with product code 35339 65 to avoid disclosing data for individual companies.
[14]For 1982, data for product code 3533A 00 were included with product code 3533B 00.
[15]For 1987, data for product codes 3533B 21 are combined with product code 3533B 34 to avoid disclosing data for individual companies.
[16]For 1987, data for product code 35355 41 are combined with product code 35355 45 to avoid disclosing data for individual companies.
[17]For 1987, data for product code 35363 15 are combined with product code 35363 37 to avoid disclosing data for individual companies.
[18]For 1982, data for product codes 35363 32 and 35363 34 included air hoists only. Data for other nonelectric chain and wire rope hoists were included with poduct code 35363 38.
[19]For 1982, data for product codes 35364 01, 35364 02, 35364 03, 35364 04, and 35364 05 included only electric overhead traveling cranes. All nonelectric overhead traveling cranes were included with product code 35364 06.
[20]For 1982, data for product 35364 17 were included with product code 35364 54.
[21]For 1982, data for product codes 35373 01 and 35373 02 included electric motor powered operator riding work trucks not fitted with lifting or handling equipment.
[22]For 1982, data for product codes 35373 03, 35373 08, and 35373 16 were included with product code 35373 18.
[23]For 1987, data for product code 35373 06 are combined with product code 35373 08 to avoid disclosing data for individual companies.
[24]For 1982, data for product codes 35373 05 and 35373 06 included internal combustion and other nonelectric powered operator riding work trucks not fitted with lifting or handling equipment.
[25]For 1982, data for product code 35373 15 were included with product code 35373 17. This figure represents industrial tractors only. Electric motor powered operator riding work trucks not fitted with lifting or handling equipment were included with product codes 35373 01 and 35373 02. Internal combustion or other nonelectric powered operator riding work trucks not fitted with lifting or handling equipment were included with product codes 35373 05 and 35373 06.
[26]For 1987, data for product code 35373 18 are combined with product code 35373 25 to avoid disclosing data for individual companies.
[27]For 1982, data for product code 35373 25 were not collected separately, but were included with product code 35373 39.

Table 3. Materials Consumed by Kind: 1987 and 1982

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material		1987		1982	
			Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3531, CONSTRUCTION MACHINERY					
	Materials, parts, containers, and supplies		**(X)**	**6 085.6**	**(X)**	**5 507.9**
	Mill shapes and forms, except castings and forgings:					
	Carbon steel:					
331011	Bars and bar shapes	1,000 s tons	(S)	151.2	(S)	157.7
331012	Sheet and strip	do.	(S)	141.4	**154.9	78.5
331013	Plates	do.	(S)	249.8	(S)	303.4
331015	Structural shapes	do.	(S)	81.8	(S)	68.0
331017	Wire and wire products	do.	(S)	4.4	(S)	12.1
331019	All other carbon steel mill shapes and forms	do.	(S)	94.6	(S)	119.1
	Alloy steel, except stainless:					
331021	Bars and bar shapes	1,000 s tons	(S)	64.5	(S)	57.7
331029	All other alloy steel mill shapes and forms	do.	*12.3	11.2	**33.2	35.3
	Stainless steel:					
331033	Sheet and strip	1,000 s tons	(S)	1.8	(S)	1.6
331050	All other stainless steel mill shapes and forms	do.	(S)	.6	(S)	.5
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes	mil lb.	(S)	3.2	(S)	1.5
335143	Plate, sheet, and strip, including military cups and discs	do.	(S)	1.2	(S)	2.5
335152	Pipe and tube	do.	(S)	10.8		
	Aluminum and aluminum-base alloy:					
335301	Sheet, plate, and foil	mil lb.	(S)	4.6	(S)	3.4
335012	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, extruded shapes, etc.)	do.	(S)	8.9	(S)	7.8
335792	Insulated copper wire and cable, except magnet wire (quantity of copper content)	do.	(S)	6.2	(S)	2.7

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3531, CONSTRUCTION MACHINERY —Con.				
339915	Metal powders ..... mil lb..	(S)	1.4	(S)	6.9
190023	Iron and steel scrap, excluding home scrap ..... 1,000 s tons..	(D)	(D)	(S)	12.4
	Castings (rough and semifinished):				
332011	Iron (gray and malleable) ..... 1,000 s tons..	(S)	246.5	(S)	242.4
332045	Steel ..... do..	(S)	189.5	(S)	285.3
336005	Aluminum and aluminum-base alloy ..... mil lb..	(S)	24.2	(S)	21.2
336006	Copper and copper-base alloy ..... do..	(S)	2.8	(S)	4.2
336008	Other nonferrous ..... do..	**1.7	3.8	(S)	3.1
346200	Iron and steel forgings ..... 1,000 s tons..	(S)	225.1	(S)	272.7
	Engines:				
351920	Diesel and semidiesel ..... thousands..	(S)	322.8	(S)	370.6
351901	Gasoline and other carburetor ..... do..	(S)	34.3	(S)	26.8
362120	Integral horsepower electric motors and generators (1 hp and larger) ..... do..	(S)	16.7	(S)	43.5
	Valves:				
349271	Fluid power (hydraulic and pneumatic)	(X)	94.1	(X)	70.9
349404	All other	(X)	5.3	(X)	3.6
349261	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies	(X)	42.9	(X)	37.9
	Pumps (complete assemblies):				
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions ..... thousands..	(S)	178.7	(S)	117.2
356102	All other pumps ..... do..	(S)	26.5	(S)	7.3
	Bearings, including mounted and unmounted:				
356218	Ball	(X)	52.0	(X)	57.6
356201	Roller	(X)	49.7	(X)	65.2
356921	Filters for hydraulic fluid power systems	(X)	4.6	(X)	5.3
359301	Fluid power (hydraulic and pneumatic) cylinders and rotary actuators	(X)	124.7	(X)	89.3
301102	Pneumatic tires ..... millions..	(S)	127.0	(S)	142.0
356601	Speed changers, gears, and industrial high-speed drives	(X)	178.9	(X)	228.3
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ..... 1,000 gal..	(S)	26.0	(S)	24.2
305201	Rubber and plastics hose and belting	(X)	33.1	(X)	52.7
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	13.9	(X)	9.7
308006	Fabricated plastics products, except gaskets	(X)	19.3	(X)	8.5
345001	Bolts, nuts, screws, washers, fasteners, rivets, and screw machine products	(X)	48.2	(X)	47.8
346901	Metal stampings ..... 1,000 s tons..	(S)	10.5	(S)	6.8
356301	Air and gas compressors, except refrigeration compressors ..... thousands..	(S)	3.4	(S)	5.6
344001	Fabricated structural metal products	(X)	145.1	(X)	100.6
349012	Fabricated wire products, including wire rope, cable, springs, etc. ..... 1,000 s tons..	(S)	24.8	(S)	43.1
354501	Cutting tools for machine tools	(X)	34.0	(X)	43.3
970099	All other materials and components, parts, containers, and supplies	(X)	[3] 910.5	(X)	1 656.7
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	1 009.1	(X)	543.4
	INDUSTRY 3532, MINING MACHINERY				
	Materials, parts, containers, and supplies	**(X)**	**633.7**	**(X)**	***824.4**
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ..... 1,000 s tons..	(S)	11.7	(S)	21.4
331012	Sheet and strip ..... do..	(S)	2.9	(S)	3.9
331013	Plates ..... do..	(S)	17.4	(S)	35.2
331015	Structural shapes ..... do..	(S)	3.3	**14.9	7.3
331017	Wire and wire products ..... do..	(S)	.6	**5.4	3.6
331019	All other carbon steel mill shapes and forms ..... do..	(S)	3.8	(S)	7.3
	Alloy steel, except stainless:				
331021	Bars and bar shapes ..... 1,000 s tons..	(S)	10.9	*15.2	13.7
331029	All other alloy steel mill shapes and forms ..... do..	(S)	1.7	(S)	14.3
	Stainless steel:				
331033	Sheet and strip ..... 1,000 s tons..	(S)	1.0	(S)	1.4
331050	All other stainless steel mill shapes and forms ..... do..	(S)	.3	(S)	4.0
	Copper and copper-base alloy:				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ..... mil lb..	(S)	1.7	(S)	*6.5
335143	Plate, sheet, and strip, including military cups and discs ..... do..	(S)	.1		
335152	Pipe and tube ..... do..	(S)	.4		
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ..... mil lb..	(S)	1.2		
335012	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, extruded shapes, etc.) ..... do..	(S)	.3	(S)	2.5
335792	Insulated copper wire and cable, except magnet wire (quantity of copper content) ..... do..	(S)	1.4	(S)	(5)
339915	Metal powders ..... do..	(D)	(D)	(S)	32.6
190023	Iron and steel scrap, excluding home scrap ..... 1,000 s tons..	(S)	.4	(S)	.4
	Castings (rough and semifinished):				
332011	Iron (gray and malleable) ..... 1,000 s tons..	(S)	9.2	**14.2	19.0
332045	Steel ..... do..	(S)	30.4	(S)	56.6
336005	Aluminum and aluminum-base alloy ..... mil lb..	(S)	1.1	**.4	1.1
336006	Copper and copper-base alloy ..... do..	(S)	3.3	(S)	1.8
336008	Other nonferrous ..... do..			(S)	3.0
346200	Iron and steel forgings ..... 1,000 s tons..	(S)	17.9	**15.1	31.0
	Engines:				
351920	Diesel and semidiesel ..... thousands..	(S)	4.5	**.9	5.0
351901	Gasoline and other carburetor ..... do..	(D)	(D)	(S)	(D)

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987 Quantity[1]	1987 Delivered cost (million dollars)	1982 Quantity[1]	1982 Delivered cost (million dollars)
	INDUSTRY 3532, MINING MACHINERY—Con.				
362120	Integral horsepower electric motors and generators (1 hp and larger) ..... thousands	(S)	2.7	(S)	37.8
	Valves:				
349271	Fluid power (hydraulic and pneumatic)	(X)	3.8	(X)	6.5
349404	All other	(X)	.3	(X)	.6
349261	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies	(X)	3.2	(X)	3.6
	Pumps (complete assemblies):				
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions ..... thousands	(S)	4.4	(S)	9.9
356102	All other pumps ..... do	(S)	.6	(S)	.9
	Bearings, including mounted and unmounted:				
356218	Ball	(X)	4.2	(X)	5.5
356201	Roller	(X)	10.5	(X)	17.5
356921	Filters for hydraulic fluid power systems	(X)	.7	(X)	1.5
359301	Fluid power (hydraulic and pneumatic) cylinders and rotary actuators	(X)	6.1	(X)	12.8
301102	Pneumatic tires ..... millions	(S)	.8	(S)	11.5
356601	Speed changers, gears, and industrial high-speed drives	(X)	19.8	(X)	58.9
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ..... 1,000 gal	(S)	3.4	(S)	3.7
305201	Rubber and plastics hose and belting	(X)	2.2	(X)	4.4
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	2.3	(X)	3.8
308006	Fabricated plastics products, except gaskets	(X)	.6	(X)	1.6
345001	Bolts, nuts, screws, washers, fasteners, rivets, and screw machine products	(X)	5.7	(X)	7.2
348901	Metal stampings ..... 1,000 s tons	(S)	.2	(S)	1.2
356301	Air and gas compressors, except refrigeration compressors ..... thousands	(D)	(D)	*.2	.2
344001	Fabricated structural metal products	(X)	28.3	(X)	21.5
349012	Fabricated wire products, including wire rope, cable, springs, etc. ..... 1,000 s tons	(S)	1.0	(S)	3.5
354501	Cutting tools for machine tools	(X)	3.9	(X)	4.8
970099	All other materials and components, parts, containers, and supplies	(X)	167.3	(X)	217.7
971000	Materials, parts, containers, and supplies n.s.k.[2]	(X)	213.2	(X)	115.5
	INDUSTRY 3533, OIL AND GAS FIELD MACHINERY				
	Materials, parts, containers, and supplies	**(X)**	**1 011.9**	**(X)**	**3 711.8**
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ..... 1,000 s tons	(S)	38.9	(S)	184.8
331013	Plates ..... do	(S)	9.5	(S)	70.5
331015	Structural shapes ..... do	(S)	12.3	(S)	59.3
331006	All other carbon steel mill shapes and forms ..... do	(S)	11.7	(S)	65.3
	Alloy steel, except stainless:				
331021	Bars and bar shapes ..... 1,000 s tons	(S)	58.7	(S)	363.8
331029	All other alloy steel mill shapes and forms ..... do	(S)	14.1	(S)	86.1
	Stainless steel:				
331033	Sheet and strip ..... 1,000 s tons	(S)	3.0	(S)	104.5
331050	All other stainless steel mill shapes and forms ..... do	(S)	11.3		
335105	Copper and copper-base alloy ..... mil lb	(S)	.4	(S)	4.8
335001	Aluminum and aluminum-base alloy ..... do	(S)	.4	(S)	8.0
	Castings (rough and semifinished):				
332011	Iron (gray and malleable) ..... 1,000 s tons	**28.5	36.4	(S)	170.3
332045	Steel ..... do	(S)	27.7	(S)	236.0
336005	Aluminum and aluminum-base alloy ..... mil lb	**.3	1.0	(S)	5.1
336006	Copper and copper-base alloy ..... do	(S)	.6	(D)	(D)
336008	Other nonferrous ..... do	(S)	.3	(S)	(D)
339915	Metal powders ..... do	1.6	14.5	(S)	56.1
346200	Iron and steel forgings ..... 1,000 s tons	15.4	26.9	(S)	225.7
351920	Diesel and semidiesel engines ..... thousands	(S)	7.1	**4.9	75.6
	Bearings, including mounted and unmounted:				
356218	Ball	(X)	1.2	(X)	16.9
356201	Rollers	(X)	5.3	(X)	35.5
356810	Plain bearings and bushings	(X)	1.9	(X)	9.0
356601	Speed changers, gears, and industrial high-speed drives	(X)	3.7	(X)	18.0
362120	Integral horsepower electric motors and generators (1 hp and larger) ..... thousands	(S)	2.6	(S)	26.9
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	11.6	(X)	38.1
308006	Fabricated plastics products, except gaskets	(X)	3.0	(X)	6.8
	Valves:				
349271	Fluid power (hydraulic and pneumatic)	(X)	3.9	(X)	35.5
349404	All other	(X)	6.5	(X)	63.5
349261	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies	(X)	4.6	(X)	13.8
354501	Cutting tools for machine tools	(X)	6.6	(X)	46.6
	Pumps (complete assemblies):				
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions ..... thousands	(S)	6.4	(S)	25.0
356102	Other pumps ..... do	(S)	3.6	(S)	37.9
356921	Filters for hydraulic fluid power systems	(X)	.9	(X)	2.2
359301	Fluid power (hydraulic and pneumatic) cylinders and rotary actuators	(X)	12.3	(X)	15.3
970099	All other materials and components, parts, containers, and supplies	(X)	225.6	(X)	978.2
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	437.4	(X)	604.3

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material		1987		1982	
			Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3534, ELEVATORS AND MOVING STAIRWAYS					
	Materials, parts, containers, and supplies		**(X)**	**496.7**	**(X)**	**[5]486.3**
	Mill shapes and forms, except castings and forgings:					
	Carbon steel:					
331011	Bars and bar shapes	1,000 s tons	(S)	21.5	(S)	8.2
331012	Sheet and strip	do	[6]38.4	26.4	[6]36.9	18.8
331013	Plates	do	(S)	9.9	[6]16.8	6.9
331015	Structural shapes	do	(S)	17.4	(S)	26.2
331017	Wire and wire products	do	(S)	.3	[6]7.6	7.9
331019	All other carbon steel mill shapes and forms	do	(S)	12.0		
331020	Alloy steel, except stainless	do	(X)	[3]	(D)	(D)
	Stainless steel:					
331033	Sheet and strip	1,000 s tons	[6]2.8	8.3	(S)	8.6
331050	All other stainless steel mill shapes and forms	do	(S)	.2	(S)	1.8
	Copper and copper-base alloy:					
335102	Rod, bar, mechanical wire, including extruded and/or drawn shapes	mil lb	(S)	.7	(S)	2.6
335143	Plate, sheet, and strip, including military cups and discs	do	(S)	3.9	(S)	2.1
335152	Pipe and tube	do	(Z)	(Z)		
	Aluminum and aluminum-base alloy:					
335301	Sheet, plate, and foil	mil lb	(S)	[7]	(S)	2.3
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc.	do	[6]2.5	4.0	(S)	5.4
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.)	do	(S)	[7]9	(D)	(D)
335792	Insulated copper wire and cable, except magnet wire (quantity of copper content)	do	[6].9	1.1	(S)	4.4
	Castings (rough and semifinished):					
332011	Iron (gray and malleable)	1,000 s tons	[6]5.4	7.3	(S)	11.7
332045	Steel	do	(S)	1.4	(S)	9.9
336005	Aluminum and aluminum-base alloy	mil lb	[6].4	.8	(S)	1.5
336003	Other nonferrous	do	(D)	[3]	(S)	.9
346200	Iron and steel forgings	1,000 s tons	(S)	.9	(D)	(D)
349271	Fluid power (hydraulic and pneumatic) valves		(X)	3.0	(X)	1.6
349261	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies		(X)	.4	(X)	1.0
351901	Gasoline and other carburetor engines	thousands	(D)	[3]	(D)	(D)
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions	do	9.3	3.6	(S)	6.3
356921	Filters for hydraulic fluid power systems		(X)	(Z)	(X)	(D)
	Electric motors and generators:					
362115	Fractional horsepower electric motors (less than 1 hp), excluding timing motors	thousands	[6]34.9	3.0	(S)	2.4
362120	Integral horsepower motors and generators (1 hp and larger)	do	(S)	7.6	(S)	13.4
	Bearings, including mounted and unmounted:					
356218	Ball		(X)	1.0	(X)	1.2
356201	Roller		(X)	1.2	(X)	2.2
369101	Storage batteries	thousands	(D)	[3]	(D)	(D)
356810	Plain bearings and bushings		(X)	.5	(X)	.2
356601	Speed changers, gears, and industrial high-speed drives		(X)	3.7	(X)	3.9
305201	Rubber and plastics hose and belting		(X)	.2	(X)	(D)
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets		(X)	1.6	(X)	(D)
360101	Electric transmission, distribution, and control equipment		(X)	21.8	(X)	38.4
301101	Pneumatic tires and inner tubes		(X)	[3]	(X)	(D)
359225	Pistons, piston rings, carburetors, valves (intake and exhaust only)		(X)	-	(X)	-
359301	Fluid power (hydraulic and pneumatic) cylinders and rotary actuators		(X)	[3]	(X)	2.8
359941	Flexible metal hose and tubing		(X)	[3]	(X)	(D)
353721	Industrial truck and tractor parts and attachments		(X)	[3]	(X)	(D)
970099	All other materials and components, parts, containers, and supplies		(X)	[3]138.4	(X)	131.9
971000	Materials, parts, containers, and supplies, n.s.k.[2]		(X)	193.7	(X)	142.5
	INDUSTRY 3535, CONVEYORS AND CONVEYING EQUIPMENT					
	Materials, parts, containers, and supplies		**(X)**	**1 231.8**	**(X)**	**[5]1 113.2**
	Mill shapes and forms, except castings and forgings:					
	Carbon steel:					
331011	Bars and bar shapes	1,000 s tons	(S)	32.1	(S)	35.3
331012	Sheet and strip	do	(S)	47.0	(S)	46.7
331013	Plates	do	(S)	22.4	(S)	35.7
331015	Structural shapes	do	(S)	30.2	(S)	43.8
331017	Wire and wire products	do	(S)	4.9	(S)	2.5
331019	All other carbon steel mill shapes and forms	do	(S)	32.7	[6]44.1	30.8
331020	Alloy steel, except stainless	do	(S)	3.7	(S)	12.9
	Stainless steel:					
331033	Sheet and strip	1,000 s tons	(S)	20.5	(S)	13.3
331050	All other stainless steel mill shapes and forms	do	(S)	17.2	(S)	9.9
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes	mil lb	(S)	.3	(S)	2.1
335143	Plate, sheet, and strip, including military cups and discs	do	(S)	[3]		
335152	Pipe and tube	do	(S)	[3].4	(S)	3.0
	Aluminum and aluminum-base alloy:					
335301	Sheet, plate, and foil	mil lb	(S)	4.7	(S)	3.1
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc.	do	(S)	6.6	(S)	5.0
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.)	do	(S)	.4	(S)	.2

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987 Quantity[1]	1987 Delivered cost (million dollars)	1982 Quantity[1]	1982 Delivered cost (million dollars)
	INDUSTRY 3535, CONVEYORS AND CONVEYING EQUIPMENT—Con.				
335792	Insulated copper wire and cable, except magnet wire (quantity of copper content) ..... mil lb..	(S)	.3	(S)	2.8
	Castings (rough and semifinished):				
332011	Iron (gray and malleable) ..... 1,000 s tons..	(S)	14.5	(S)	21.6
332045	Steel ..... do..	(S)	6.3	(S)	6.6
336005	Aluminum and aluminum base alloy ..... mil lb..	(S)	2.4	(S)	2.9
336003	Other nonferrous ..... do..	(S)	.4	** 1	*.2
346200	Iron and steel forgings ..... 1,000 s tons..	(S)	13.0	(S)	14.0
349271	Fluid power (hydraulic and pneumatic) valves	(X)	5.2	(X)	7.1
349261	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies	(X)	1.7	(X)	2.0
351901	Gasoline and other carburetor engines ..... thousands..	(S)	.5	(S)	1.3
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions ..... do..	(S)	3.5	(S)	4.8
356921	Filters for hydraulic fluid power systems	(X)	.2	(X)	.8
	Electric motors and generators:				
362115	Fractional horsepower electric motors (less than 1 hp), excluding timing motors ..... thousands..	(S)	13.0	(S)	16.8
362120	Integral horsepower motors and generators (1 hp and larger) ..... do..	(S)	15.3	(S)	17.6
	Bearings, including mounted and unmounted:				
356218	Ball	(X)	17.3	(X)	15.9
356201	Roller	(X)	12.8	(X)	11.5
369101	Storage batteries ..... thousands..	(S)	.1	(S)	.2
356810	Plain bearings and bushings	(X)	5.9	(X)	8.2
356601	Speed changers, gears, and industrial high-speed drives	(X)	19.6	(X)	18.1
305201	Rubber and plastics hose and belting	(X)	19.5	(X)	15.5
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	3.6	(X)	3.3
360101	Electric transmission, distribution, and control equipment	(X)	25.9	(X)	20.2
301101	Pneumatic tires and inner tubes	(X)	.2	(X)	2.3
359225	Pistons, piston rings, carburetors, valves (intake and exhaust only)	(X)	.4	(X)	(D)
359301	Fluid power (hydraulic and pneumatic) cylinders and rotary actuators	(X)	5.1	(X)	5.8
359941	Flexible metal hose and tubing	(X)	.8	(X)	.7
353721	Industrial truck and tractor parts and attachments	(X)	.4	(X)	.6
970099	All other materials and components, parts, containers, and supplies	(X)	339.2	(X)	342.2
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	481.6	(X)	325.5
	INDUSTRY 3536, HOISTS, CRANES, AND MONORAILS				
	Materials, parts, containers, and supplies	**(X)**	**[10]290.1**	**(X)**	**([10])**
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ..... 1,000 s tons..	(S)	4.5	(NA)	(NA)
331012	Sheet and strip ..... do..	**5.0	3.0	(NA)	(NA)
331013	Plates ..... do..	(S)	10.5	(NA)	(NA)
331015	Structural shapes ..... do..	(S)	5.1	(NA)	(NA)
331017	Wire and wire products ..... do..	(S)	.5	(NA)	(NA)
331019	All other carbon steel mill shapes and forms ..... do..	(S)	3.3	(NA)	(NA)
	Alloy steel, except stainless:				
331021	Bars and bar shapes ..... 1,000 s tons..	(S)	1.4	(NA)	(NA)
331029	All other alloy steel mill shapes and forms ..... do..	**1.5	1.8	(NA)	(NA)
331031	Stainless steel ..... do..	(S)	.2	(NA)	(NA)
335107	Copper and copper-base alloy ..... mil lb..	(S)	.5	(NA)	(NA)
335001	Aluminum and aluminum-base alloy mill shapes and forms ..... do..	(S)	2.8	(NA)	(NA)
335792	Insulated copper wire and cable, except magnet wire (quantity of copper content) ..... do..	64.2	1.4	(NA)	(NA)
339915	Metal powders ..... do..	(D)	[3]	(NA)	(NA)
	Castings (rough and semifinished):				
332011	Iron (gray and malleable) ..... 1,000 s tons..	(S)	5.2	(NA)	(NA)
332045	Steel ..... do..	(S)	5.1	(NA)	(NA)
336002	Other nonferrous ..... mil lb..	(S)	5.2	(NA)	(NA)
346200	Iron and steel forgings ..... 1,000 s tons..	(S)	5.5	(NA)	(NA)
362120	Integral horsepower electric motors and generators (1 hp or larger) ..... thousands..	*64.8	11.4	(NA)	(NA)
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions ..... do..	(S)	1.9	(NA)	(NA)
	Bearings, including mounted and unmounted:				
356218	Ball	(X)	2.6	(NA)	(NA)
356201	Roller	(X)	1.2	(NA)	(NA)
356601	Speed changers, gears, and industrial high-speed drives	(X)	3.6	(NA)	(NA)
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ..... 1,000 gal..	(S)	1.6	(NA)	(NA)
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	.7	(NA)	(NA)
345001	Bolts, nuts, screws, fasteners, rivets, and screw machine products	(X)	4.3	(NA)	(NA)
346901	Metal stampings ..... 1,000 s tons..	(S)	1.5	(NA)	(NA)
344001	Fabricated structural metal products	(X)	5.4	(NA)	(NA)
349012	Fabricated wire products, including wire rope, cable, springs, etc. ..... 1,000 s tons..	(S)	5.6	(NA)	(NA)
354501	Cutting tools for machine tools	(X)	1.4	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies	(X)	366.0	(NA)	(NA)
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	126.9	(NA)	(NA)

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3537, INDUSTRY TRUCKS AND TRACTORS				
	Materials, parts, containers, and supplies	(X)	[10]1 308.9	(X)	([10])
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes, 1,000 s tons	(S)	43.2	(NA)	(NA)
331012	Sheet and strip, do	(S)	32.0	(NA)	(NA)
331013	Plates, do	(S)	45.4	(NA)	(NA)
331015	Structural shapes, do	(S)	18.2	(NA)	(NA)
331017	Wire and wire products, do	(S)	2.7	(NA)	(NA)
331019	All other carbon steel mill shapes and forms, do	(S)	17.0	(NA)	(NA)
331020	Alloy steel, except stainless, do	(S)	6	(NA)	(NA)
	Stainless steel:				
331033	Sheet and strip, 1,000 s tons	(S)	4.2	(NA)	(NA)
331050	All other stainless steel mill shapes and forms, do			(NA)	(NA)
	Copper and copper-base alloy:				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes, mil lb	(S)	1.7	(NA)	(NA)
335143	Plate, sheet and strip, including military cups and discs, do			(NA)	(NA)
335152	Pipe and tube, do	(S)	6	(NA)	(NA)
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil, mil lb	**1.3	1.9	(NA)	(NA)
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc, do	(S)	5.6	(NA)	(NA)
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.), do			(NA)	(NA)
335792	Insulated copper wire and cable, except magnet wire (quantity of copper content), do	(S)	9	(NA)	(NA)
	Castings (rough and semifinished):				
332011	Iron (gray and malleable), 1,000 s tons	(S)	22.2	(NA)	(NA)
332045	Steel, do	(S)	10.4	(NA)	(NA)
336005	Aluminum and aluminum-base alloy, mil lb	(S)	11.6	(NA)	(NA)
336003	Other nonferrous, do			(NA)	(NA)
346200	Iron and steel forgings, 1,000 s tons	**3.3	6.1	(NA)	(NA)
349271	Fluid power (hydraulic and pneumatic) valves	(X)	24.5	(NA)	(NA)
349261	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies	(X)	14.9	(NA)	(NA)
351901	Gasoline and other carburetor engines, thousands	(S)	39.2	(NA)	(NA)
359412	Hydraulic fluid power pumps, motors, and hydrostatic transmissions, do	(S)	29.9	(NA)	(NA)
356921	Filters for hydraulic fluid power systems	(X)	2.8	(NA)	(NA)
	Electric motors and generators:				
362115	Fractional horsepower electric motors (less than 1 hp), excluding timing motors, thousands	(S)	6.8	(NA)	(NA)
362120	Integral horsepower motors and generators (1 hp and larger), do	(S)	24.7	(NA)	(NA)
	Bearings, including mounted and unmounted:				
356218	Ball	(X)	7.1	(NA)	(NA)
356201	Roller	(X)	5.4	(NA)	(NA)
369101	Storage batteries, thousands	(S)	14.3	(NA)	(NA)
3568[10]	Plain bearings and bushings	(X)	2.4	(NA)	(NA)
356601	Speed changers, gears, and industrial high-speed drives	(X)	17.0	(NA)	(NA)
305201	Rubber and plastics hose and belting	(X)	2.9	(NA)	(NA)
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	3.6	(NA)	(NA)
360101	Electric transmission, distribution, and control equipment	(X)	26.8	(NA)	(NA)
301101	Pneumatic tires and inner tubes	(X)	11.2	(NA)	(NA)
359225	Pistons, piston rings, carburetors, valves (intake and exhaust only)	(X)	3.7	(NA)	(NA)
359301	Fluid power (hydraulic and pneumatic) cylinders and rotary actuators	(X)	16.4	(NA)	(NA)
359941	Flexible metal hose and tubing	(X)	3.5	(NA)	(NA)
353721	Industrial truck and tractor parts and attachments	(X)	141.1	(NA)	(NA)
970099	All other materials, components, parts, containers, and supplies	(X)	328.9	(NA)	(NA)
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	357.5	(NA)	(NA)

[1]For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[2]Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

[3]Data are included with material code 970099 to avoid disclosing data for individual companies.

[4]For 1982, total included data for pig iron, excluding silvery iron.

[5]For 1982, data for material codes 335102, 335143, and 335152 were combined with material code 335792 to avoid disclosing data for individual companies.

[6]For 1982, total included data for metal powders.

[7]For 1987, data for material code 335301 are included with material code 335008 to avoid disclosing data for individual companies.

[8]For 1982, total included data for copper and copper-base alloy castings (rough and semifinished). For 1982, data for copper castings were excluded from material code 336003.

[9]For 1987, data for material code 335143 are combined with material code 335152 to avoid disclosing data for individual companies.

[10]Industry definition is new for 1987 and, therefore, 1987 data for materials consumed are not comparable to prior-year data. As a result, 1982 materials consumed data are not available.

APPENDIX
Scope and Coverage and Explanation of Terms

GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

EXPLANATION OF TERMS

Number of establishments and companies–A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

All employees–Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

Production workers–Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., powerplant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

Other employees–Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and

servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

Payroll–Includes the gross earnings for the "employees" defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

Production-worker hours–Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

Cost of materials–Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

Specific materials consumed (table 3)–In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Establishments consuming less than a specified amount (usually $10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as "not specified by kind" (n.s.k.).

Value of shipments and other receipts–Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead and profit).

Shipments or production of individual products (table 2)–In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

Value added by manufacture–This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value

added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

Expenditures for new plant and equipment–Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

End-of-year inventories–Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

Specialization and coverage ratios–An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

Specialization ratio–Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio–Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.